

IN THE CLAIMS

Please replace the prior claims on file with the claims now presented below.

Listing Of Claims

1.(Presently Amended) A radiation sensor (10) of an integrated type which is provided with at least one light-sensitive and/or X-ray-sensitive sensor element (11) whose output signal indicates the amount of radiation absorbed by the sensor element, and with at least one temperature sensor (12, 12a, 12b) whose output signal indicates the temperature prevailing at the temperature sensor and also with at least one further sensor element (12) which is sensitive to a physical quantity other than that whereto the light-sensitive and/or X-ray-sensitive sensor element (11) is sensitive, all sensor elements (11, 12) delivering similar output signals and being connectable to an evaluation unit (13) as similar components wherein said temperature sensor is integrated on said chip of said radiation sensor, said chip having a substantially uniform temperature distribution so that temperature sensed by said temperature sensor corresponds to the temperature of the entire radiation sensor chip enabling direct and accurate determination of the temperature at the radiation sensor.

Cancel claim 2.

3. (Previously amended) A radiation sensor as claimed in claim 1, characterized in that the light-sensitive and/or X-ray-sensitive sensor elements are arranged in the form of a matrix on the radiation sensor.

4. (Previously Amended) A radiation sensor as claimed in claim 1, characterized in that it is provided with a temperature sensor (12a, 12b) which includes a current mirror with two paths (T₃-T₅, T₄-T₆), a respective bipolar transistor (T₁, T₂) being provided in each of

the two paths, the base of said bipolar transistor being short-circuited to the collector, the surface areas of said bipolar transistors being different and the current (I) in the current paths being approximately proportional to the temperature of the bipolar transistors.

5. (Original) A radiation sensor as claimed in claim 4, characterized in that the current (I) in the current paths is coupled out as an output current (I_{out}) via a further current mirror (T_7).

6. (Presently Amended) A radiation sensor detector as claimed in claim 4
wherein said radiation sensor is part of a radiation detector, characterized in that the difference between the emitter-base voltages of the bipolar transistors (T_1, T_2) is determined by a coupling out circuit (A) so as to be delivered as an output voltage (V_{out}).

7. (Previously Amended) A radiation sensor according to claim 1 wherein said radiation detector is part of a radiation detector, notably an X-ray detector for a computed tomography apparatus, which said detector is provided with said at least one radiation sensor (10) ~~as claimed in at least one of the claim 1~~, as well as with an associated evaluation unit (13) for reading out and evaluating the output signals delivered by the radiation sensor.

8. (Original) A radiation detector as claimed in claim 7, characterized in that the radiation sensor (10) is provided with a temperature sensor (12, 12a, 12b) and that the evaluation unit (13) is arranged in such a manner that it corrects the output signals of the light-sensitive and/or X-ray sensitive sensor elements (11) of the radiation sensor by means of the temperature value measured by the temperature sensor.

9. (Previously Amended) A radiation detector as claimed in claim 7, characterized in that the radiation sensor (10) is provided with a temperature sensor (12, 12, 12b), and that the evaluation unit (13) is arranged in such a manner that it is capable of making a diagnosis concerning faults and/or ageing of the radiation sensor (10) on the basis of the temperature value measured by the temperature sensor.

10. (Previously Amended) An X-ray examination apparatus having a radiation sensor as claimed in claim1 and a radiation detector of which said radiation sensor is a part of said radiation detector which is provided with a radiation detector, notably an X-ray detector, which includes at least one radiation sensor (10) as claimed in claim 1.

11. A radiation sensor as claimed in claim 1 wherein said evaluation unit does not differentiate whether it reads from a one of said output signals of said sensor elements such as a light sensitive and/or X-ray sensitive element or an output signal from said further sensitive element.

12. A radiation sensor as claimed in claim1 wherein said evaluation unit can address has an address from said on of said output signals that is read by said evaluation unit and said address differentiates which of said output signals is read by said evaluation unit.

13. A radiation sensor as is claimed in claim1 wherein said evaluation unit provides a diagnosis of an operating condition of said radiation sensor based on a measured temperature condition.